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<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/766,416	MATSUI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Julie-Huyen L. Ngo	2871	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/12/05.
2. ☒ The allowed claim(s) is/are 10-12 and 18-21.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

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| <ol style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br/>Paper No./Mail Date _____</li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____.</li> <li>7. <input type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____.</li> </ol> |
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## **DETAILED ACTION**

### ***Allowable Subject Matter***

Claims 10-12 and 18-21 are allowed.

### ***Reasons for Allowance***

Claim 10 is allowable since there is no prior art of record that teaches a liquid crystal display comprising:

- a main wiring layer made of Aluminum (Al) or Aluminum alloy with an upper surface having an average roughness of 3.0 nm or larger and formed on a substrate; and
- a protective layer containing refractory metal and formed on the main wiring layer

Claims 11-12 and 18-21 are allowed since it depends on the allowed claim 10.

### ***Conclusion***

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Liu (US 20050128403 A1) discloses an in-plane switching (IPS) liquid crystal display comprising structure of the gate electrode 110 and the reflectors 112 and 114 including a conductor 104 such as ITO and IZO, an insulator 106 such as silicon nitride

(SiN<sub>x</sub>) over the conductor 104, and a reflective layer 108 made of high reflective metal such as aluminum, silver and aluminum alloy over the insulator 106.

Jeong et al. (US 6081308 A) disclose a liquid crystal display comprising the gate electrode, in which a first metal film 22 is formed by depositing an Al or an Al alloy film to a thickness of 2,000 about 4,000 Å on a transparent substrate 20. Then, a second metal film 24 is formed by depositing a refractory metal film to a thickness 500 about 2,000 Å on the first metal film.

Seo et al. (US 5825437 A) disclose a liquid crystal display comprising a pure Al used for the gate electrode, and an Al alloy having a refractory metal added to the Al metal is formed on the top of the Al electrode, the anodic oxide film and/or aluminum alloy (AlTa) over the Al electrode suppresses the hillock generated on the surface of the Al electrode during the subsequent high temperature process, due to the mechanical force applied to the Al electrode.

#### ***Contact Information***

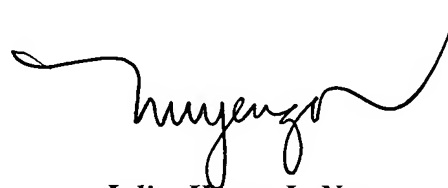
Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Julie-Huyen L. Ngo whose telephone number is (571) 272-2295. The Examiner can normally be reached on T-Friday.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Mr. Robert H. Kim can be reached at (571) 272-2293.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1562.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

December 23, 2005

A handwritten signature in black ink, appearing to read "huyen ngo", with a long, sweeping horizontal line extending to the right.

***Julie -Huyen L. Ngo***  
***Patent Examiner***  
Art Unit 2871